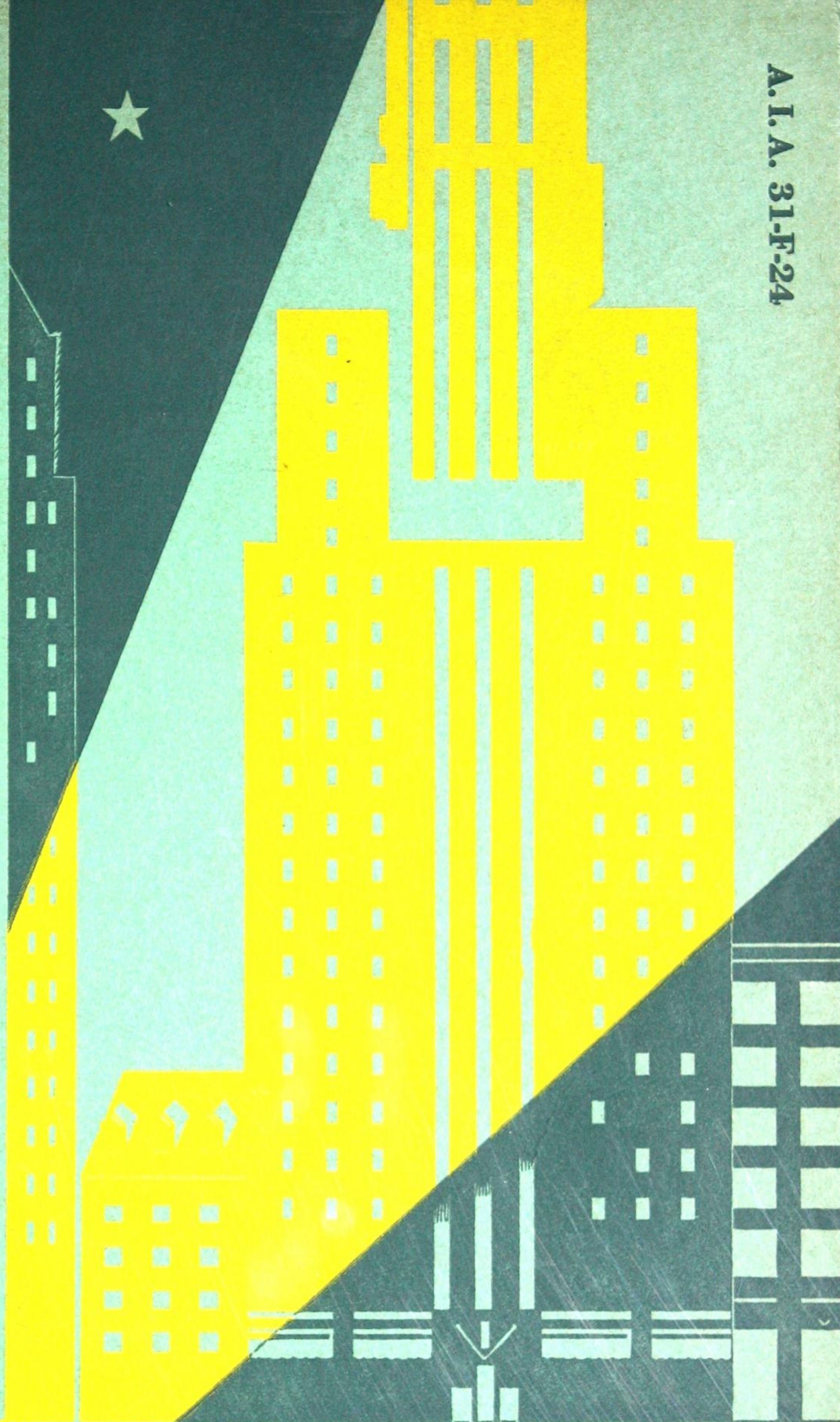


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Skylines beyond
the
TWILIGHT ZONE



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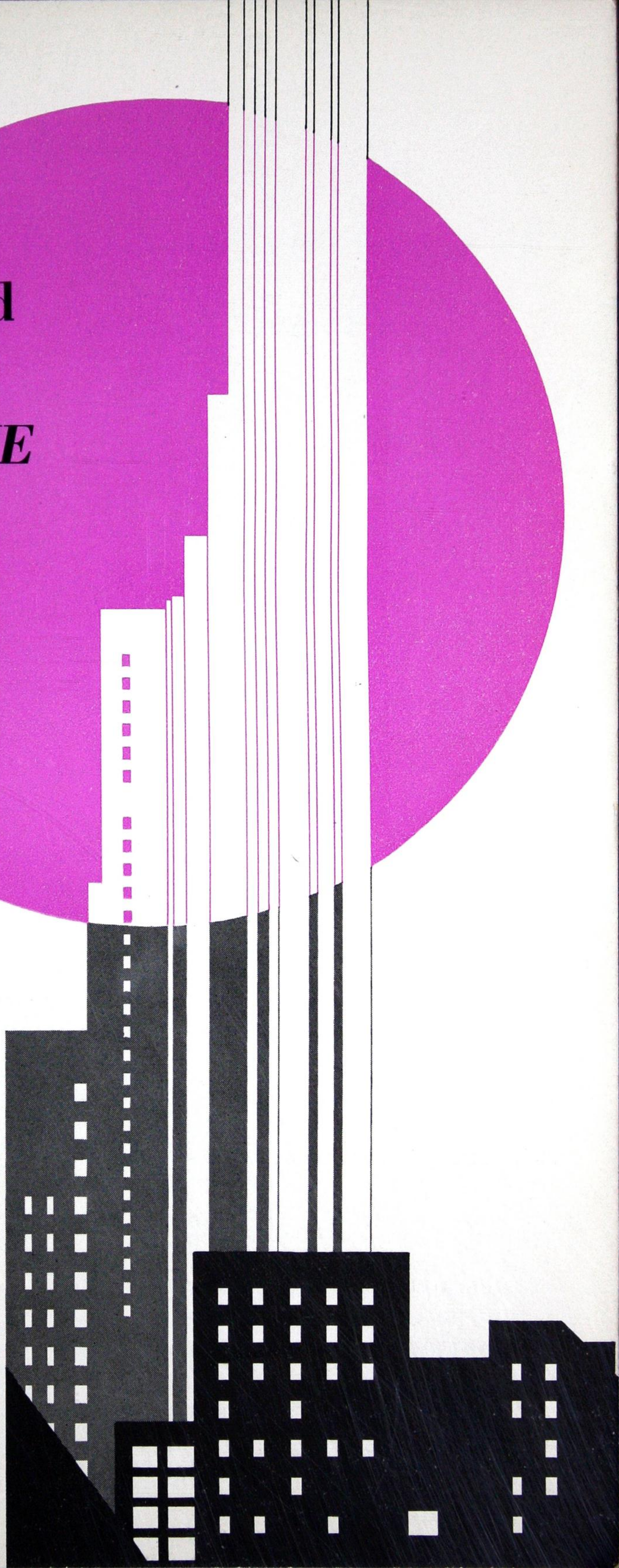
Skylines beyond the *TWILIGHT ZONE*

A discussion of modern principles and practice in floodlighting

by

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BILLIONS IN BEAUTY
LOST IN THE

Twilight Zone



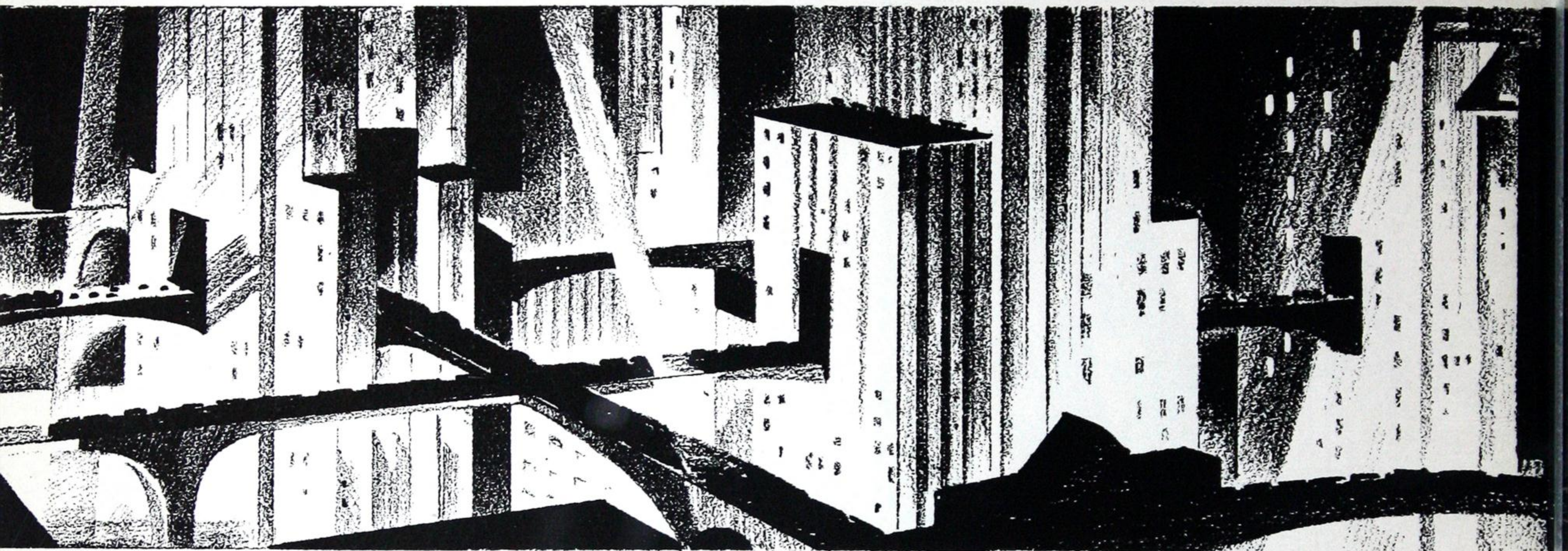
ARCHITECTURE has brought forth America's most distinctive and most creative contribution to the world of art. Few cities, from the largest eastern metropolis to the modest mid-western center of industry, are without some evidence of the beauty which results when a master of building design undertakes to interpret in steel and stone the daring spirit of American commerce and industry.

It would be futile to attempt to estimate in dollars and cents the cost of time, material, and professional services which have been devoted to the work of making buildings attractive to look at. Certainly, if you total the cost of business, industrial, and public buildings now standing, it is safe to say that they could have been erected for billions of dollars less if they had been put up entirely without regard to appearance. But since pre-historic days mankind has known the satisfactions of beautifying the structures which he uses for work, for entertainment, or for worship. It is not enough merely to assemble walls, floors, and roofs. These com-

ponents, in order to please those who use them or behold them, must be assembled in attractive proportions and constructed of attractive materials.

Only within the past few years have building owners and designers given thought to the possibility of making architectural beauty independent of daylight. Billions have been spent to make buildings beautiful and yet the result of this architectural skill and the cost of beautifying materials has been lost as soon as the sun goes down.

Today owners of buildings and architects who design buildings are coming to a new point of view. They are recognizing that the building whose beauty is extinguished by



darkness loses half of its appearance value. To recover and preserve this lost value they are calling upon the electrical industry—the industry which meets the challenge of the “Twilight Zone” wherever it is encountered.

The painstaking research of the electrical industry’s illuminating engineers have shown that the twilight zone—which designates any degree of lighting above obvious darkness yet short of adequate illumination—is a foe to efficiency, in offices, factories, schools, and stores. Those illuminating engineers whose work brings them in contact with the building industry also know that it is a foe to the fullest realization of architectural beauty.

Few skylines today are in total darkness. Most cities can boast at least one or two examples of floodlighted structures. Yet no city in America or in the world has realized the full possibilities of night-time architectural beauty through adequate, scientifically planned floodlighting. To these cities, to the people who live in them and enjoy them, and to the architects who are creating the structures that augment their beauty, the engineers of the electrical industry hold out the vision of new and glorious skylines beyond the twilight zone.

FLOODLIGHTING

HAS A *Double Appeal*

TO THE OWNER of a fine building floodlighting appeals from two angles.

One appeal, and a very strong one, is the pride taken in beautifying a possession into which one has put much thought and effort. From the standpoint of sheer beauty floodlighting is a source of unique satisfaction to the owner as well as to the designer. The impressiveness of floodlighting is not merely that it makes a building visible by night. It creates entirely new and distinctive effects. Against the dark background of evening sky the outlines of floodlighted buildings present a striking contrast. The lines of a beautifully designed tower are transformed by night into a lustrous castle in the sky. Attention may be focused on the most interesting portions of the structure in a manner impossible by day. New and striking shadow or silhouette effects can be obtained. The building itself can be brought to vibrant life if desired.

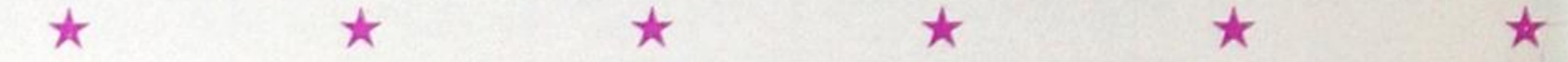
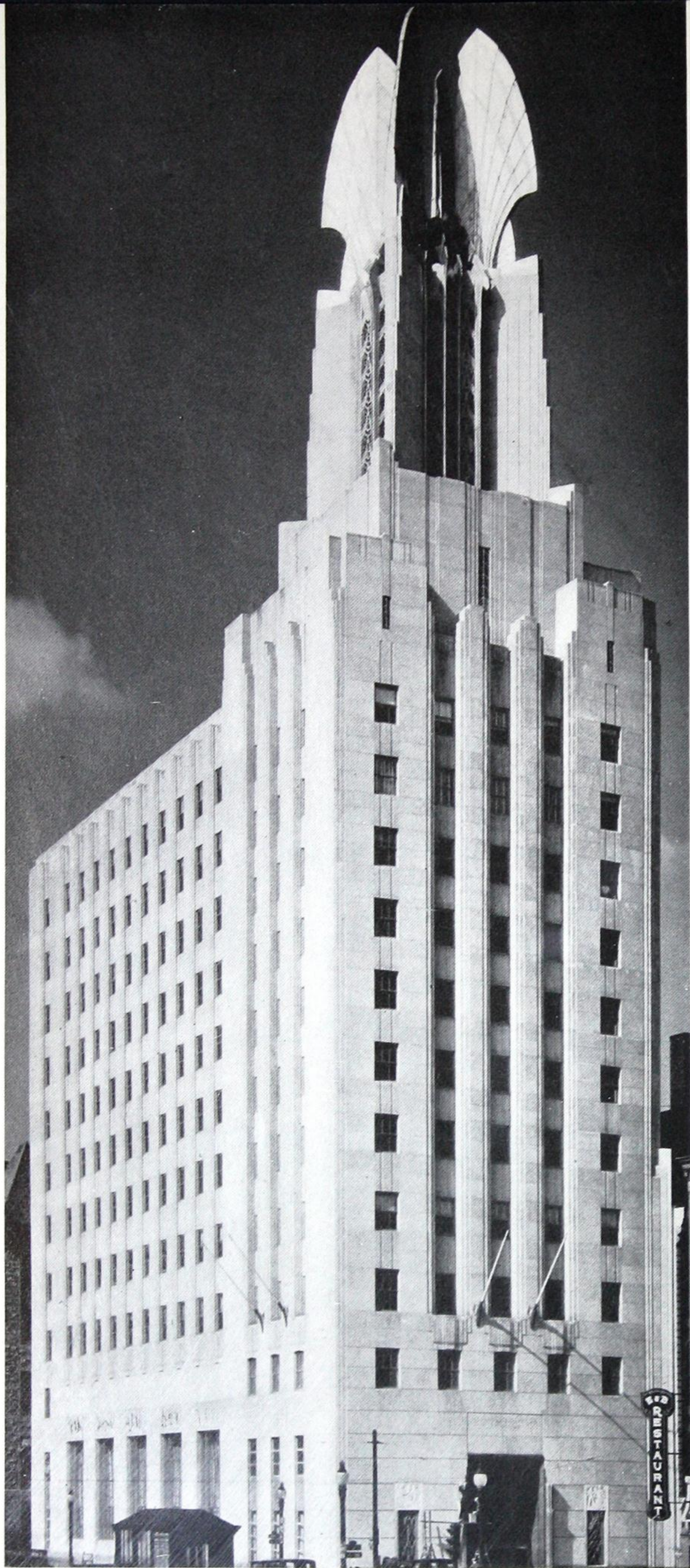
Floodlighting needs no justification beyond its beauty value and from this standpoint alone it more than justifies the moderate cost which it involves. As a matter of fact, however, floodlighting has very definite practical values.

COMMERCIAL ADVANTAGES OF FLOODLIGHTING

For the owner of a building which must be made attractive to tenants, or for the large organization which wishes to impress its name and reputation on thousands, or even millions, of possible customers, floodlighting has a very definite commercial value. By increasing the impressiveness of the building and fixing its name and location

BEAUTIFULLY ILLUMINATED TOWER OF
EDISON BUILDING AT PHILADELPHIA, PA.



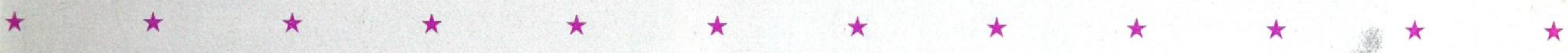


THESE TWO VIEWS OF THE GENESEE VALLEY TRUST COMPANY, ROCHESTER, NEW YORK, SHOW HOW THE BEAUTY OF THE BUILDINGS BY DAY IS NOT ONLY MADE VISIBLE BY NIGHT BUT IS ALSO GIVEN A TREATMENT WHICH BRINGS OUT OTHER BEAUTIES NOT FOUND IN THE DAYTIME VIEW.

in the consciousness of those who pass floodlighting helps to increase the value of the building as a business address.

The beauty and the reputation that go with floodlighting help the owner or manager of the office building to get tenants and to hold them.

As a contribution to the impressiveness and attractiveness of a city floodlighting helps to enhance the standing of the city. The skyline has become one of the measures of a city's importance. One has but to imagine the skyline of New York, for instance, without any night-time illumination to visualize what floodlighting contributes in terms of civic beauty. With the individuality and ingenuity which characterizes modern floodlighting it is possible to make the night-time view of a building an impressive trade mark of prestige.



FLOODLIGHTING AS A PRESTIGE BUILDER

IN ORDER to measure the value of any advertising medium it is necessary to determine how many people are reached for a given cost.

In the case of the floodlighted building such information must necessarily be based on estimates. Some such estimates are available showing the surprising number of individuals who can be reached and impressed by a striking floodlighting installation. One of these installations for which estimates have been made is the Elverson Building of the Philadelphia Inquirer. This has been said to have the highest circulation of any Philadelphia floodlighting installation. According to reliable observers some 500,000 persons see this building every night. It is readily apparent that this is a larger circle of contacts than would be provided by most newspapers. Over a single week the number of individuals reached and impressed by this form of advertising in this particular case would rival that of the largest national magazines.

Another Philadelphia building—the Fidelity Mutual Life Insurance Company—is seen by some 200,000 persons per evening.

By taking the average nightly cost of the current which makes this floodlighting possible, and comparing it with the cost of the printed page, it becomes at once apparent how economical an advertising medium floodlighting can be.



ELVERSON BUILDING, PHILADELPHIA, PA.



BELL TELEPHONE BUILDING, MONTREAL, CANADA



RAND BUILDING, BUFFALO, N. Y.



KOPPERS BUILDING, PITTSBURGH, PA.

FLOODLIGHTING IS AN ECONOMICAL METHOD OF ADVERTISING. TH



PYTHIAN TEMPLE, NEW YORK, N. Y.



SOUTH BEND BUILDING AND LOAN BUILDING



FIDELITY MUTUAL LIFE INSURANCE CO., PHILADELPHIA, PA.

COST OF OPERATING THE ABOVE INSTALLATIONS AVERAGES \$3.50 PER HOUR.

OPPORTUNITIES FOR FLOODLIGHTING

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

ALTHOUGH floodlighting has come to be associated chiefly with large office and public buildings this is only one of the numerous applications for which it is appropriate. All the various considerations which recommend floodlighting for office buildings make it desirable for various other purposes.

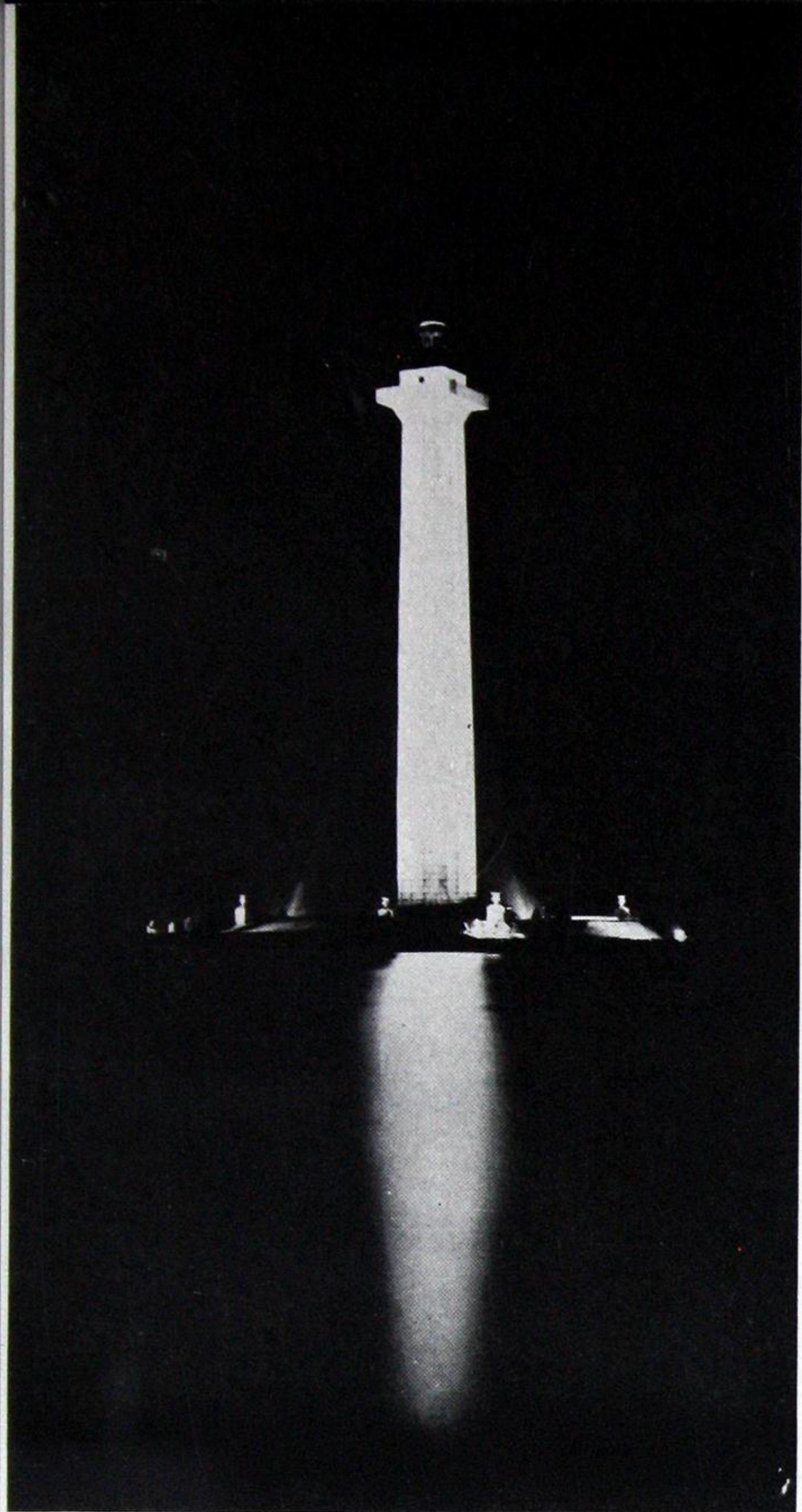
Floodlighting is a valuable aid in focusing attention on points of scenic interest. Particularly today when so many motorists drive at night, either within their neighborhood or while on tour, well planned floodlighting can add greatly to the opportunities for scenic enjoyment. This in turn helps to extend the reputation and the advertising possibilities, for a given locality or municipality, of parks, falls, and unique rock formations. The possibilities of floodlighting in connection with outdoor sports has only recently been realized. Floodlighting is now successfully applied to baseball fields, football fields, miniature golf courses, driving ranges, tennis courts, and other places of amusement. Industry finds that floodlighting adds to the advertising value of large manufacturing plants, and that it gives daylight usefulness to yards or shipping platforms or any area where night work must be carried on out of doors.

Some of the special opportunities for using floodlights to advantage are dealt with in greater detail in the paragraphs which follow.

PUBLIC MEMORIALS

This view of the Lincoln Memorial at Washington, D. C., impressively demonstrates the manner in which good floodlighting enhances the splendor of a fine architectural tribute to one of the nation's heroes. It is not by any means the least of the advantages of floodlighting that it gives night visibility without in any way sacrificing the dignity of the architecture or impairing the lines of the structure on which it is used.





THE PERRY MEMORIAL MONUMENT

AT PUT-IN-BAY, OHIO, IS A PARTICULARLY FINE EXAMPLE OF MONUMENT FLOODLIGHTING

MONUMENTS

Finely designed monuments contribute a flavor of real individuality to a city or community. They represent traditions worthy of being symbolized in bronze or granite and by the same token worthy of being given the widest possible prominence. Although a building may fulfill the utilitarian part of its function regardless of exterior lighting a monument designed only to be seen loses its effect entirely as soon as it becomes invisible in darkness. Floodlighting, therefore, is peculiarly appropriate for monuments of every kind.

CHURCH SPIRES

From the earliest days of architecture religious edifices have given the architect some of his finest opportunities to express structural beauty in line, mass, and color. Floodlighting now adds another range of effects to his repertoire. The graceful spire of Chicago Temple lends itself beautifully to an architectural use of light. It is a fine illustration of the manner in which floodlighting enhances the beauty of a church structure and intensifies the impression made upon those who come within the range of visibility. Floodlighting is equally adaptable to the illumination of attractive facades, entrances, and towers.





HISTORIC STRUCTURES

Valuable help is given by floodlighting to municipalities or historical societies desiring to focus attention on historic spots or structures. This beautiful illumination of Washington's headquarters at Morristown, N. J., is obtained by means of five 1000 watt projectors.



COLONNADE SILHOUETTES



The beauty of an attractive colonnade at night can be shown off to fine advantage by floodlighting the area back of it so that the pillars stand out in relief. The Soldiers and Sailors Memorial at Kansas City provides a splendid example of colonnade lighting.

INDUSTRIAL PLANTS

Buildings used for industrial purposes offer many attractive opportunities for floodlighting. The Gestetner Company at Bloomfield, N. J., has used floodlighting to add to the interest of its property at night.

The attractive building which houses the generating plant of the Philadelphia Electric Company (Richmond Station) presents an impressive example of modern floodlighting.





Floodlighting offers a compelling invitation for passers-by to stop and inspect a home offered for sale. It helps to build up an air of distinction and individuality in addition to making the home easily visible to those who must make their inspection in the evening. Floodlighting is used to good effect in this manner by the owners of Forest Hills, the exclusive subdivision of the Rockefeller Estate at Cleveland, Ohio.

HOMES FOR SALE

FILLING STATIONS Filling stations do much of their business at night and therefore there is a very real commercial advantage in having them floodlighted. Not only do they attract added trade, but the illumination also helps the attendants to render service more speedily and more efficiently.



RAILROAD YARDS

In railroad yards floodlighting raises the standards of safety and efficiency. For similar reasons floodlighting is used by construction companies in illuminating the scene of operations in excavating, bridge building, and similar work demanding night shifts.



ATHLETIC FIELDS Football fields, baseball fields, tennis courts, skating rinks and golf driving ranges greatly extend their usefulness when they are floodlighted. With a well-designed floodlighting system they can be used as effectively at night as in the daytime.





B A N K S

These two views of the Hudson City Savings Bank (Boulevard Branch) show how the beauty and dignity of the building as seen by day is preserved by floodlighting at night. The day view also illustrates the attractiveness of the Duolux Floodlighting units for applications where the light source must be at the curb. Both by day and by night the standards, to the casual observer, present the appearance of regular street lights.



D U O L U X

AN ORNAMENTAL

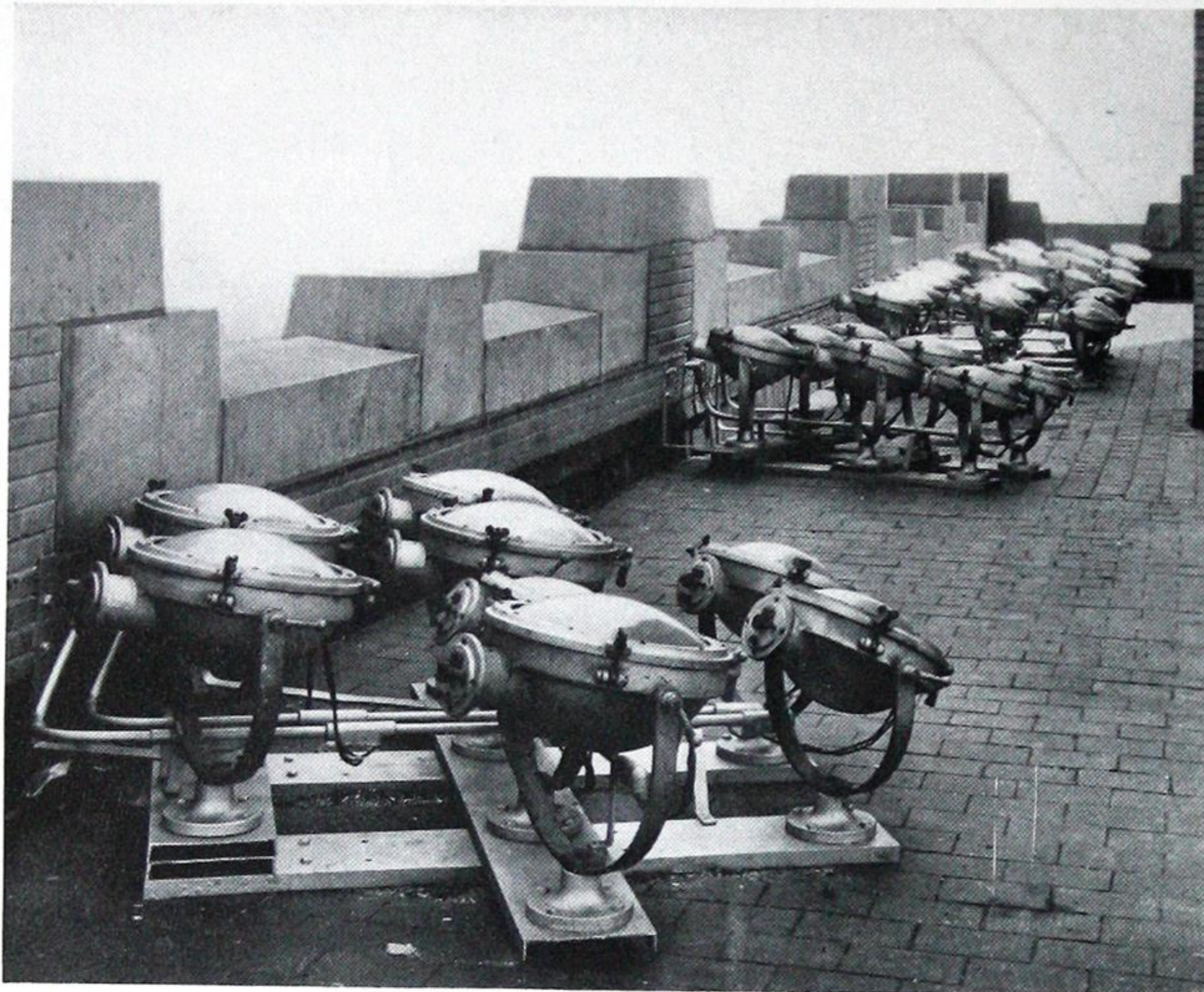
FLOODLIGHTING UNIT



FOR BUILDINGS which are difficult to floodlight because there is no place to conceal the floodlighting units Duolux offers the ideal solution. When seen by day the Duolux unit can not be distinguished from an ornamental street lighting unit. It is designed, however, with a 1000 watt lamp and reflector which throws its light on the building, while a 200 watt lamp below the reflector illuminates the glass panels of the lantern and produces the appearance of a street lamp at night.

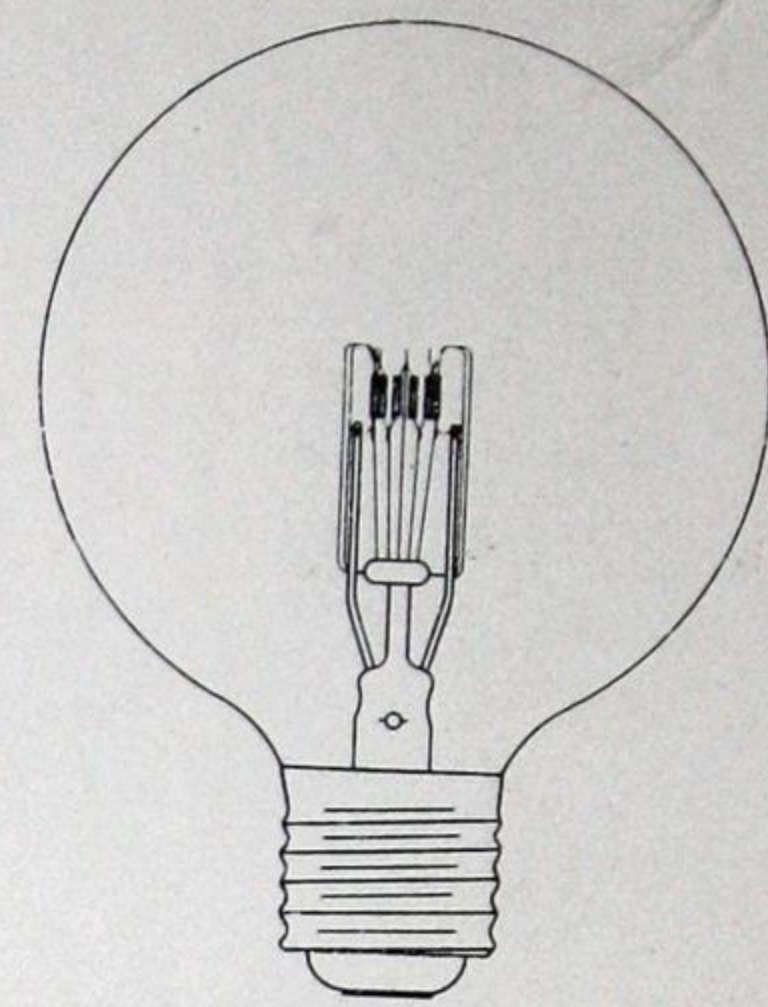
This makes it possible to floodlight low buildings or wall areas near the street level. It has been used to particularly good effect for filling stations, banks, pavilions, and suburban store fronts.

EFFICIENT EQUIPMENT ASSURES GOOD FLOODLIGHTING

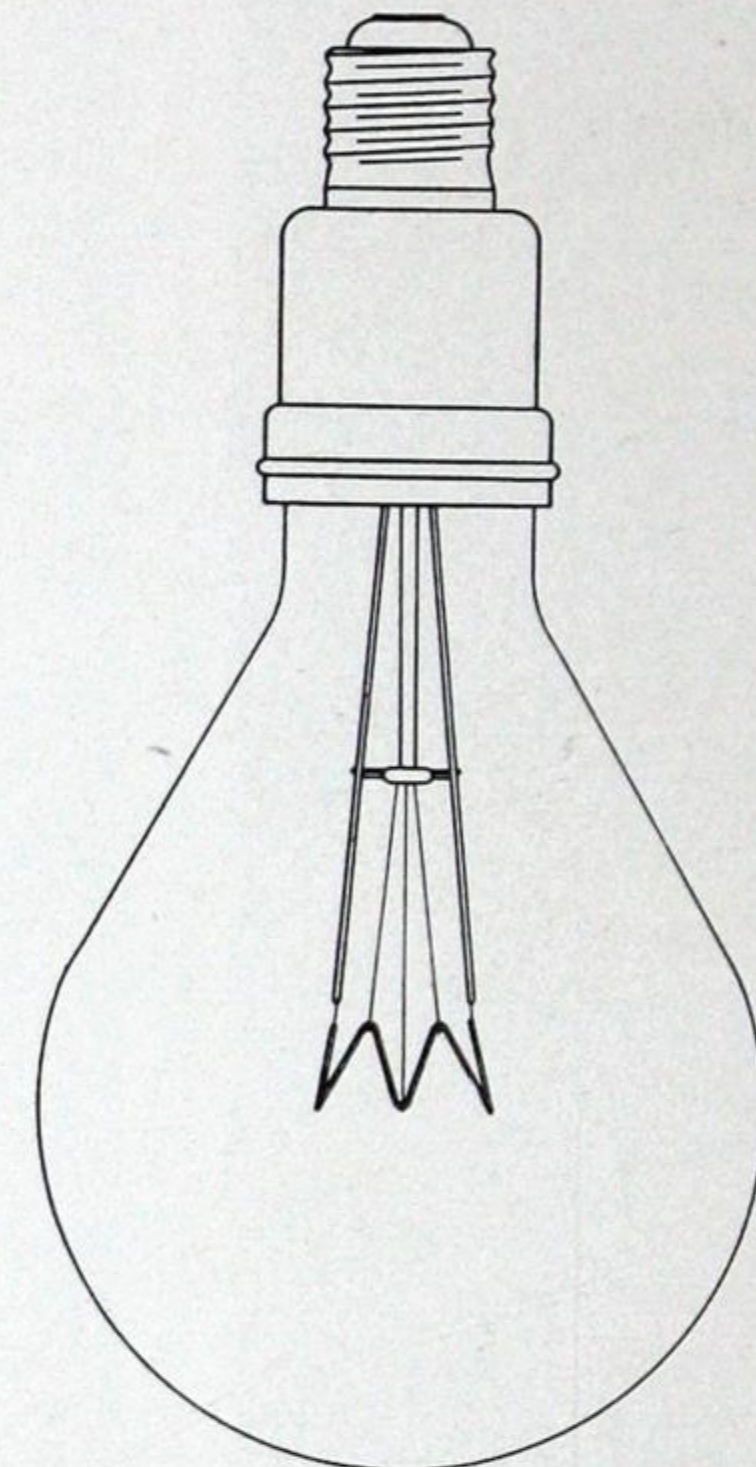


PAINTING with light is finishing touch in modern architecture. It increases the splendor of style and design at night. But, few realize that the life of this new art hangs by a thread—a thin tungsten filament. This minute coil of wire produces the floodlight beam, when used with efficient projection equipment. By the use of color the engineer can paint buildings in numerous hues just as the artist paints beautiful pictures with his palette and brush.

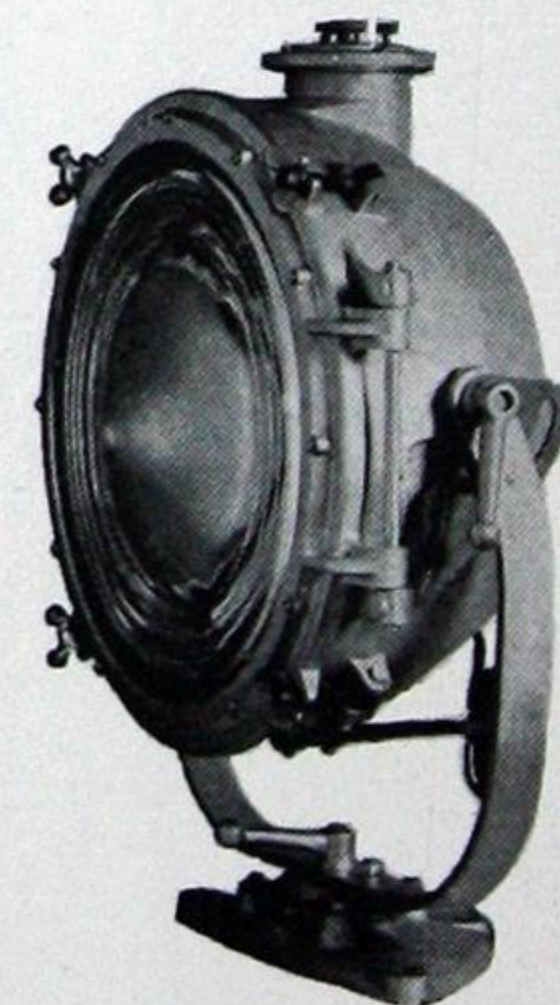
Floodlighting equipment is divided into two general classes, that using a round bulb and that designed for standard general lighting service lamps. Some of the second type can be equipped with adapters which permit the use of either type of lamp. To obtain a narrow beam—10 to 20 degrees—requires the use of a 250 or 500-watt, round-bulb, concentrated-filament, Mazda lamp. For wide beams—20 to 35 degrees—the longer life, less expensive, general lighting service Mazda lamps in the PS bulb, available in 300 to 1500 watts, is recommended.



ROUND BULB FLOODLIGHTING LAMP GIVES NARROW BEAM IN FLOODLIGHTING EQUIPMENT.



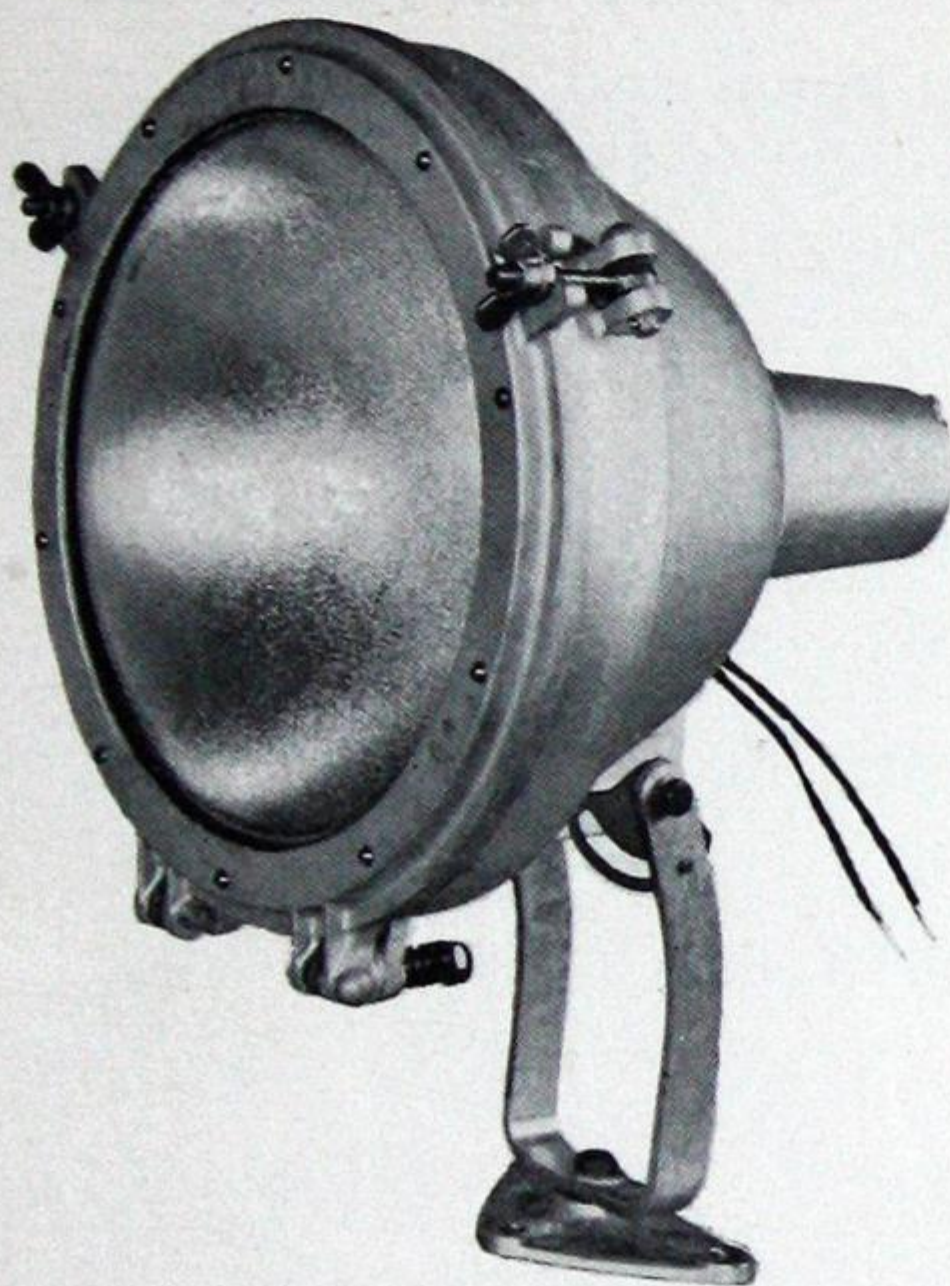
GENERAL SERVICE LAMP FOR WIDE BEAMS—GIVES LONGER LIFE.



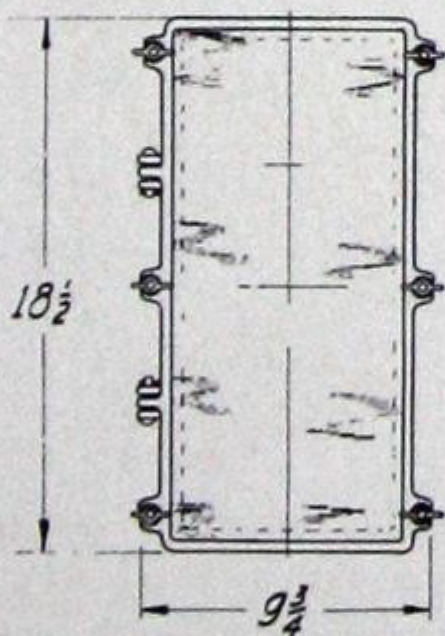
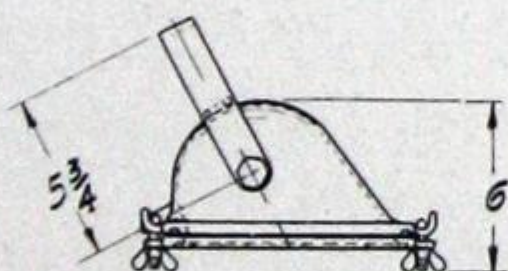
TYPE CA-20 FLOODLIGHT PROJECTOR WITH CHROMIUM-PLATED REFLECTOR. USES GENERAL SERVICE LAMPS OR ROUND BULB WITH ADAPTER. FOR GENERAL FLOODLIGHTING OF BUILDINGS, RAILROAD YARDS, OR INDUSTRIAL PROPERTIES.



SA-12 TYPE OF FLOODLIGHT FOR FLOODLIGHTING SMALL OUTDOOR AREAS. USES 250 OR 400-WATT G-40 ROUND BULB LAMPS.



TYPE CAG-16 FOR GENERAL FLOODLIGHTING WORK. USES 1000-WATT GENERAL SERVICE LAMP OR 400-WATT ROUND BULB LAMP. AVAILABLE WITH EITHER CHROMIUM-PLATED OR SILVERED GLASS REFLECTORS.



CORNICE PROJECTOR, FOR SHORT-RANGE FLOODLIGHTING. USES TWO GENERAL SERVICE LAMPS, 150 OR 200 WATT.

For still wider beams, the stippled or diffusing glass lenses should be used. There are also available spread lenses of ribbed glass for fanning out the beam in one plane. Where spill light may be a source of glare, or where it may detract from the ultimate result, louvers of concentric or parallel metal bands should be used.

The use of color, a later development in the art of floodlighting, requires the use of accessory equipment such as inner lenses of colored glass or caps which fit over the lamp bulb. To make colored light most effective it must be of an intensity comparable to that of clear light. It is necessary therefore to make allowance for low transmission of light through color screens by providing the additional wattage when needed.

One popular type of floodlighting equipment is the type CA-20 (Cast Aluminum) with a 20-inch lens of heat-resisting glass which will not crack or break when operated in rain or snow. Reflectors are of silvered glass or chromium-plated metal.

A smaller type is the SA-12, sheet aluminum. Its doors are hinged and closed under pressure on gaskets sealing the interior to make it absolutely dust and water-proof. Lenses are seated on cemented felt gaskets. An easily operated mechanism shown by the screw in the rear permits precise focusing of the lamp.

The Westinghouse type CAG-16 floodlight contains a deep silvered glass or chromium-plated reflector in which the lamps are correctly positioned by a micrometer three-way adjustment to give a high value of beam lumens. All Westinghouse floodlights are of non-ventilated construction without openings of any sort, making the unit absolutely dust and water-proof.

To permit greater flexibility in placing of light sources so as to illuminate areas on the building facades difficult to reach, the cornice unit was developed. It is effective for short range floodlighting. Of hot-galvanized cast iron casing, it has an inner surface of glossy white enamel of high reflecting power and a suitable degree of diffusion for a wide distribution of light.

VARYING THE FLOODLIGHT EFFECT

As the art of floodlighting advances new possibilities are realized. The earliest floodlighting won admiration by sheer novelty. The soft brilliance of a tower bathed in artificial illumination was a new visual experience. Standing alone, as it did, among other buildings lacking the benefit of exterior illumination, it possessed individuality which now must be obtained by more subtle planning.

Today the art has passed beyond its primitive stages. The designers of ornamental exterior lighting for buildings and monuments are no longer satisfied merely to make the structures visible at night. They concern themselves with fine variations in mood and pattern. Just as the architect may undertake to interpret the spirit of business in the building which shelters it, so the artist whose brush is a beam of light undertakes to reproduce effects appropriate to the structure. To this end he has at his command colored light and light in motion, or a combination of both.

VARIATION WITH COLOR The most obvious variation in a floodlight effect is the addition of color. To the clear light of the pioneer applications has been added the complete range of red, orange, purple, amber, and green.

The opportunity for effective use of color is amplified and extended by the development of the modern American set-back type of building. The successive terraces of the structure invite the use of successive shades and tones of light, of gradually increasing intensity toward the top.

It has been found desirable in planning a colored floodlighting effect to make the brighter colors dominate. The brighter colors are more easily seen and hence give the floodlighted building a wider radius of effectiveness. They also make more efficient use of electric current inasmuch as the less vivid colors, such as blue, require much higher intensities in order to obtain a result comparable to that which can be obtained with brighter colors.

VARIATION WITH MOVEMENT Much work remains to be done in realizing the full possibilities of mobile lighting. The effects which can be obtained are, if anything, more varied than by the use of color.

The beams of light can be made to move, changing the shape and direction of shadows, or producing a weaving of patterns not unlike the aurora borealis.

Colors can be changed or blended from one hue to another by means of dimmers.

Varying intensities of clear light superimposed on color produces changing tints and tones.

INSURING FLOODLIGHT EFFECTS IN KEEPING WITH ARCHITECT'S DESIGNS

FLOODLIGHTING is essentially a means of decoration. It paints a structure or certain parts of it with beams of clear or colored light. From the standpoint of both owner and architect the floodlighting is fully satisfactory only when it is in keeping with the general character and design of the building.

Experience shows that by keeping in mind certain vital considerations the designer of the building can help to make the floodlighting installation not only preserve the spirit of the design, but actually bring out its beauty in stronger relief.

One of the fundamentals is the avoidance of "After-thought floodlighting." The most satisfactory floodlight effects are obtained on buildings designed specifically with floodlighting in view. Designs governed solely by conditions of natural daylight take into consideration light coming from above. As every architect is fully aware, the shadow effects will be completely altered when light comes from below. When the building is designed without regard for floodlighting possibilities and then floodlighted as an afterthought — an occurrence, unfortunately, which is not unknown to architects and lighting engineers — the result sometimes fails to do justice to the architect's design or to the floodlighting art.

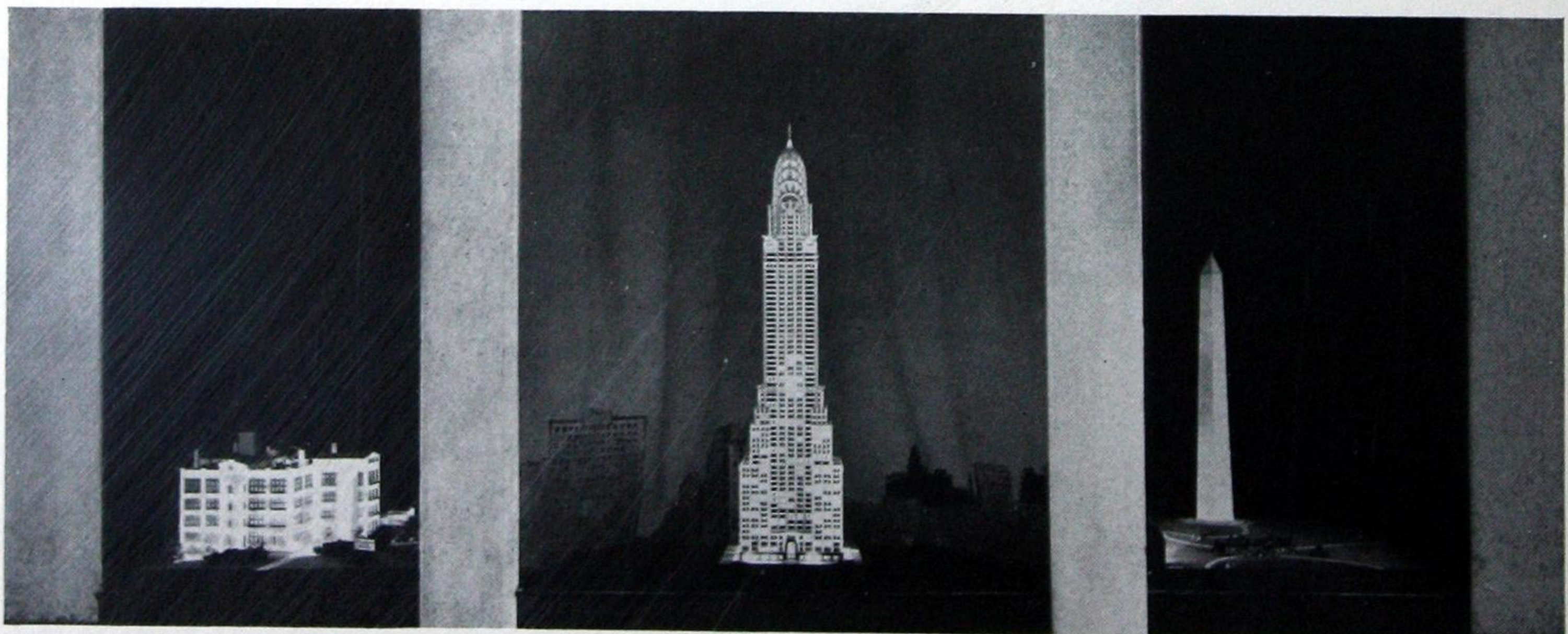
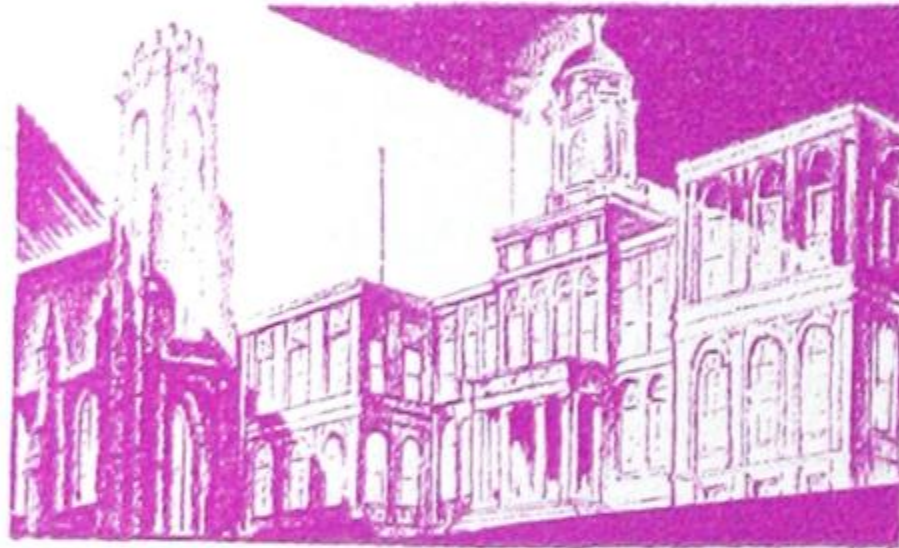
Floodlighting effects in general are most satisfactory when predominating lines are vertical. A design broken by numerous horizontal lines frequently makes satisfactory floodlighting difficult because of the heavy bands of shadow cast by the upward beams.



When only a portion of the structure is floodlighted, as is often the case, a pleasing effect depends on the mass and proportion of the floodlighted parts. By taking this into consideration when the plans are drawn it is a simple matter to prevent the likelihood of disappointing results, even though the building should be floodlighted independently. In cases where only the upper portion of the building is to be floodlighted it is desirable to provide architectural means to tie this portion of the building into the rest of the structure. One pleasing device to accomplish this purpose is the use of set-back corners for banks of projectors. These corners make it possible to support the lighted portion on pillars of light reaching down toward the base of the building. Silhouetted colonnades below the main floodlighted top portion also help to accomplish the same purpose.

Both the color and texture of materials have a definite bearing on the effectiveness of floodlighting.

In practically every case, when the possibility of floodlighting is being considered, it will be found well worth while to discuss the plans with the floodlighting specialist of a light and power company. Floodlighting specialists are also attached to the district offices of the Westinghouse organization and are always prepared to discuss the technical questions of a floodlighting installation with architects or their engineering advisers.



**RECOMMENDED INTENSITIES OF ILLUMINATION
FOR FLOODLIGHTING INSTALLATIONS**

BUILDINGS AND MONUMENTS			
TYPE OF EXTERIOR SURFACE	FOOT-CANDLES		
	NATURE OF SURROUNDINGS		
	LIGHT	MEDIUM	DARK
White Marble or Terra Cotta	8	5	3
Cream Terra Cotta Light Gray Limestone Indiana or Bedford Stone	8	6	4
Buff Limestone Buff Artificial Stone Standard Gray Limestone Smooth Buff Face Brick	10	8	6
Brier Hill Sandstone Smooth Gray Brick Gray Limestone	14	10	8
Common Tan Brick	16	14	10
Dark Gray Brick	20	18	14

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